

# BLUE EARTH COUNTY HIGHWAY DEPARTMENT

CONSTRUCTION PLAN FOR BITUMINOUS  
OVERLAY & AGGR. SHOULDER  
COUNTY STATE AID HIGHWAY NO.43



BEGIN S.A.P. 07-643-05

STA 83+06

END S.A.P. 07-643-05

STA 121+16

## DESIGN DESIGNATION

ADT (Current Year) 1533 2012

ADT (Future Year) 2453 2032

ADT (Heavy Commercial)

ESAL 237,000

9 TON DESIGN

R-VALUE 10 & R-VALUE 12

DESIGN SPEED 30 MPH

DESIGN SPEED NOT ACHIEVED AT:

SOIL FACTOR 100 STA 99+10 TO STA 121+16

SOIL FACTOR 130 STA 83+06 TO STA 99+10

SHOULDER WIDTH 8'

STOPPING SIGHT DISTANCE BASED ON

3.5' HEIGHT OF EYE

0.5' HEIGHT OF OBJECT



R 25 W

## GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT  
OF TRANSPORTATION'S "STANDARD SPECIFICATIONS  
FOR CONSTRUCTION" SHALL GOVERN.

PLAN NOT TO SCALE

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE  
COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT.  
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED  
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ALAN FORSBERG  
COUNTY ENGINEER

DATE 05/12/12 L.S. NO. 14720

DISTRICT STATE AID ENGINEER REVIEWED FOR  
COMPLIANCE WITH STATE AID POLICY

DATE 3/12/2012

DATE 3/12/2012

BETWEEN: T.H. 83 AND CSAH 15  
FROM: A PT 951' W. & 191' S. OF THE W.  
1/4 COR. OF SEC. 7-107-25  
TO: A PT APPROX. 955' N. & 395' W. OF  
THE S. 1/4 COR. OF SEC. 8-107-25

GROSS LENGTH 3810.00 FEET 0.722 MILES  
BRIDGE LENGTH 000.00 FEET 0.000 MILES  
NET LENGTH 3810.00 FEET 0.722 MILES

107 STA 83+06 TO STA 99+10

SURFACED IN: 2002 UNDER SAP 07-643-04

GRADED IN: 2002 UNDER SAP 07-643-04

STA 99+10 TO STA 121+16

OVERLAYED IN: 1992 UNDER SAP 07-643-02

SURFACED IN: 1974 UNDER SAP 07-643-01

GRADED IN: 1974 UNDER SAP 07-643-01

S.A.P. 07-643-05 SHEET NO. 1 OF 9 SHEETS

# ESTIMATED QUANTITY

ITEM NO.	ITEM	UNIT	CSAH #43	NON PART.	TOTAL
(1) 2118.501	AGGREGATE SURFACING, CL-2	TON	49	0	49
(1) 2221.501	AGGREGATE SHOULDERING, CL-1 (M)	TON	170	0	170
2232.501	MILL BITUMINOUS SURFACE	SQ YD	2694	0	2694
(1) 2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	714	0	714
(1) 2360.609	BITUMINOUS MATERIAL FOR MIXTURE (PG 58-28)	TON	46	0	46
(1) 2360.609	BITUMINOUS AGGREGATE (CLASS "A" INTERMEDIATE)	TON	259	0	259
(1) 2360.609	BITUMINOUS AGGREGATE (CLASS "A" FINE)	TON	222	0	222
(1) 2360.609	BITUMINOUS AGGREGATE (GRAVEL INTERMEDIATE)	TON	185	0	185
(1) 2360.609	BITUMINOUS AGGREGATE (GRAVEL FINE)	TON	74	0	74
(1) 2360.609	BITUMINOUS (PRODUCE, HAUL & LAY)	TON	786	0	786
(1)(2) 2506.522	ADJUST FRAME & RING CASTING	EACH	19	0	19
(3) 2580.501	TEMPORARY LANE MARKING	LIN FT	304	0	304

- (1) BASIS OF PAYMENT SPECIFIED IN SPEC. 1903 SHALL BE MODIFIED TO PRECLUDE ANY PRICE ADJUSTMENT FOR INCREASED OR DECREASED QUANTITIES.
- (2) APPROXIMATE: 13 MANHOLES & 6 WATER VALVE BOX. CONCRETE OR CAST IRON ADJUSTMENT RINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO RAISING.
- (3) PLACED ON EVERY LIFT, REMOVED BEFORE NEXT LIFT AND PRIOR TO STRIPING.

CERT. BY Alan Forberg L.I.C. NO. 14720 MAR. 10, 2012 S.A.P. 07-643-05 SHEET NO. 2 OF 9 SHEETS

PROFESSIONAL ENGINEER

## BASIS FOR PLANNED QUANTITIES

AGGREGATE SHOULDERING, & SURFACING  
COMPACTED DRY DENSITY - 140 LBS. PER CU. FT.

### BITUMINOUS SURFACE

BITUM. MAT'L FOR TACK COAT 0.05 GALS. PER SQ. YD.  
BITUM. MAT'L FOR WEAR COURSE AC (PG 58-28) 5.8% BY WEIGHT  
BITUM. COURSES, 110 LBS. PER 1" / SQ. YD.  
AGGREGATE PROPORTIONS : 35% CLASS "A" INTERMEDIATE  
30% CLASS "A" FINE  
25% GRAVEL INTERMEDIATE  
10% GRAVEL FINE

THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

STANDARD PLATES	
PLATE NO.	DESCRIPTION
4108F 80001	ADJUSTING RINGS STANDARD BARRICADES

**SHLD. & SURF. QUANTITIES**  
**ROAD #                      CSAH 43**  
**PROJECT #    S.A.P. 07-643-05**

LOCATION	LENGTH FEET	AVER WIDTH FEET	DEPTH INCHES	AGGR. SHLD. TON	AGGR. SURF. TON
<b>SHOULDER CL-1M</b>					
STA 83 + 6 TO STA 90 + 94 RT	788	5	1.5	30	
STA 90 + 94 TO STA 95 + 38 RT	444	2	1.5	10	
STA 95 + 38 TO STA 103 + 84 RT	846	5	1.5	40	
STA 83 + 6 TO STA 103 + 84 LT	2078	5	1.5	90	
<b>AGGR. SURFACING CL-2</b>					
7 DRIVEWAYS @ 7 TONS					49
<b>TOTAL</b>				<b>170</b>	<b>49</b>

P:\BITUM\12bitum\CSAH 43\43 AGGR.xlsJA

**SHOULDERING & SURFACING QUANTITIES**

CERTIFIED BY \_\_\_\_\_

LIC. NO. 14720    MAR. 10, 2012

**CSAH 43    SAP 07-643-05    SHEET 4 OF 9 SHEETS**

# CSAH 43 SUPERPAVE BITUM. CALCULATIONS

		LOCATION	LENGTH FEET	AVER WIDTH FEET	DEPTH INCHES	WEAR TON	BINDER TON	BITUM MAT'L TON	TACK COAT GAL
BITUM. WEAR	STA	83 + 6 TO STA	90 + 94	788	26	1	125	7.3	114
	STA	90 + 94 TO STA	95 + 38	444	31	1	84	4.9	76
	STA	95 + 38 TO STA	103 + 84	846	26	1	134	7.8	122
	STA	103 + 84 TO STA	121 + 16	1732	41	1	434	25.2	395
3 MAILBOX PADS @		175	LENGTH	525	2.5	1	8	0.5	7
TOTAL				786	0	46	714		

PIBITUM12bitumCSAH 43(43 SUPERPAVE)X61A

## CSAH 43 SUPERPAVE BITUM. QUANTITIES

	MIX TONS	BITUM MAT'L 5.8% TON	TOTAL AGGR. TONS	BITUM CL. "A" INTERM 35% TON	BITUM CL. "A" FINE 30% TON	BITUM GRAVEL INTERM 25% TON	BITUM GRAVEL FINE 10% TON	PRODUCE HAUL LAY TON
WEAR	786	46	740	259	222	185	74	785
TOTAL	259	222	185	74	786			

## MILL BITUM. SURFACE

SAP 07-643-05

STATION TO STATION	LOC	LENGTH	WIDTH	SQ.YD.
103 + 84 TO	121 + 16 RT	1,732	7	1,347
103 + 84 TO	121 + 16 LT	1,732	7	1,347
TOTAL				2,694

PIBITUM12bitumCSAH 43(43 MILL)X61A

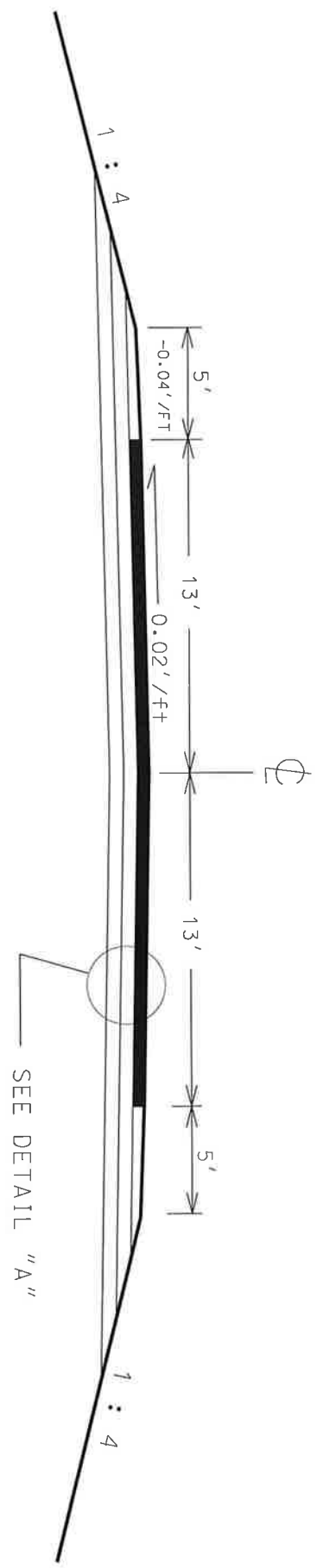
TAPER FROM LIP OF CURB AND GUTTER STARTING AT DEPTH OF 1" OUT TO 0" IN 7'. (SEE DETAIL PLAN SHEET)  
THE MILLINGS SHALL BE HAULED TO PRANGE PIT, SEE SPECIAL PROVISIONS.

## SUPERPAVE & MILLING QUANTITIES

CERTIFIED BY Alan Forsberg LIC. NO. 14720 MAR. 10, 2012 CSAH 43 S.A.P. 07-643-05 SHEET No. 5 OF 9 SHEETS

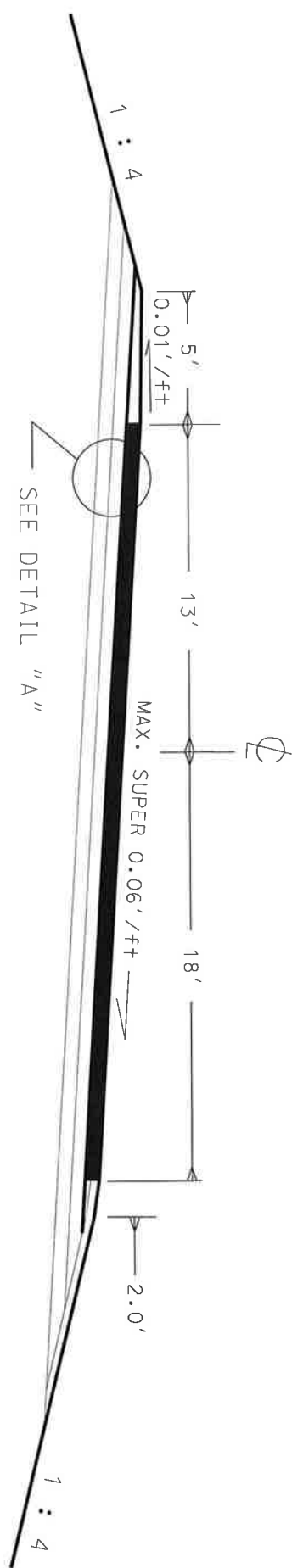
# TYPICAL SECTION

STA 83 + 06 TO STA 90 + 94  
STA 95 + 38 TO STA 99 + 10

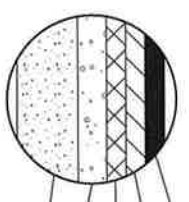


# TYPICAL CURVE SECTION

STA 90 + 94 TO STA 95 + 38 RT

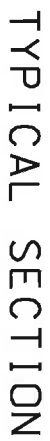


## DETAIL "A"



- 1" SP WEARING COURSE MIXTURE (2360)
- INPLACE 2" WEARING COURSE MIXTURE (2350)
- INPLACE 2" WEARING COURSE MIXTURE (2350)
- INPLACE 4" AGGR. BASE CL-5 (2211)
- INPLACE 24" SELECT GRANULAR

STA 99 + 10 TO STA 103 + 84



STA 103 + 84 TO STA 121 + 16



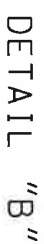
## 1" SP WEARING COURSE MIXTURE (2360)

INPLACE 2" WEARING COURSE MIXTURE (2350)

INPLACE 1.5" WEARING COURSE MIXTURE (2331)

INPLACE 1.5" WEARING COURSE MIXTURE (2341)

INPLACE 9" AGGR. BASE CL-5 (2211)



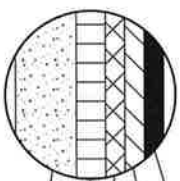
1" SP WEARING COURSE MIXTURE (2360)

INPLACE 1.5" WEARING COURSE MIXTURE (2331)

- INPLACE 1.5" WEARING COURSE MIXTURE (2341)

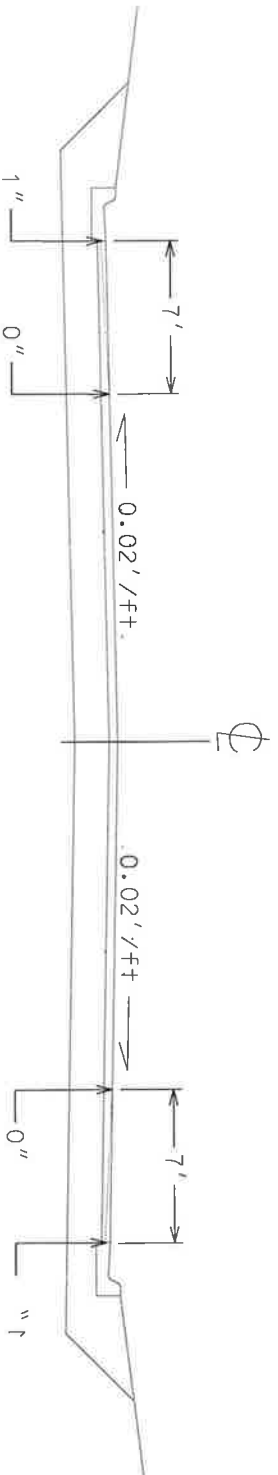
INPLACE 3" BITUM. BASE COURSE MIXTURE (2331)

INPLACE 14" AGGR. BASE CL-5 (2211)



# TYPICAL MILL SECTION DETAIL

STA 103 + 84 TO STA 121 + 16



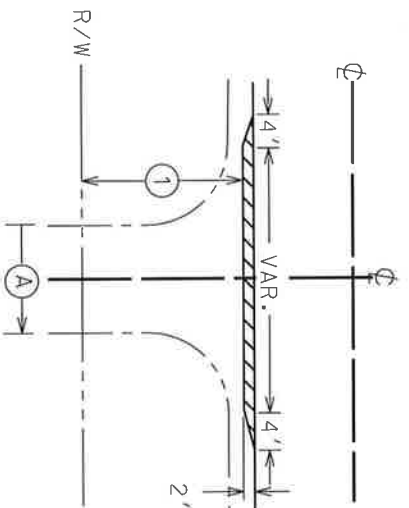
CERT. BY Alan Foraborg L.I.C. NO. 14720 MAR. 10, 2012 S.A.P. 07-643-05 SHEET NO. 8 OF 9 SHEETS

PROFESSIONAL ENGINEER



# BITUMINOUS APPROACHES AND ENTRANCES DETAIL

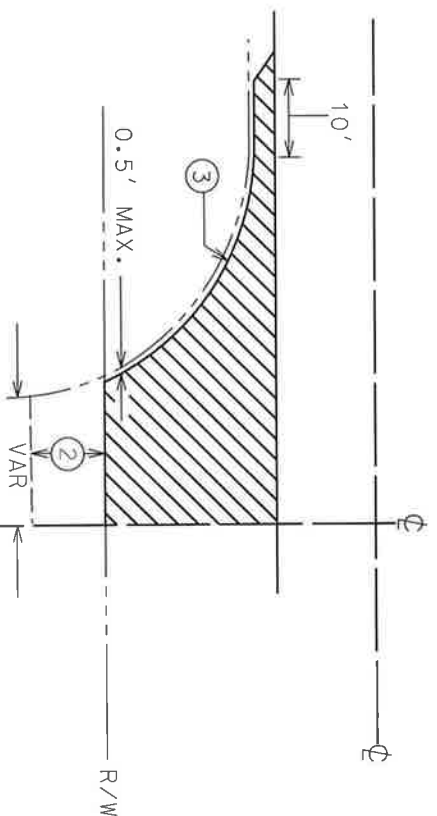
## FIELD ENTRANCE



- (A) 20' FOR SINGLE F.E.  
28' FOR DOUBLE F.E.

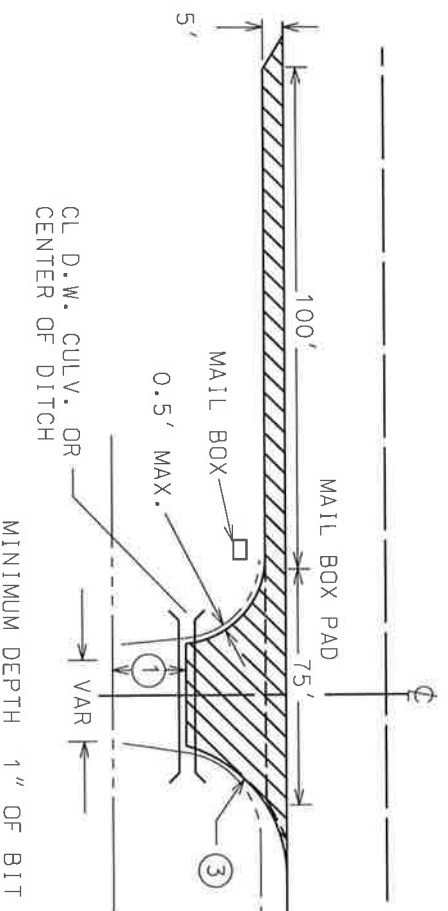
MINIMUM DEPTH 1" OF BIT

## ROAD APPROACH



MINIMUM DEPTH 1" OF BIT

## FARM & OTHER ENTRANCES



- (1) FINISH WITH AGGR. MATERIAL FROM EDGE OF BITUM. TO A MIN. OF 10'.
- (2) FINISH WITH AGGR. MATERIAL, MIN. OF 10'.
- (3) BITUM. RADIUS TO BE STAKED IN FIELD BY THE ENGINEER - 25' MIN. (FOR FARM D.W. CONSIDER 30' TO 40' MAX.)

CONTRACTOR WILL BE REQUIRED TO SHAPE & NOTCH ALL DRIVEWAYS, INTERSECTIONS & MAIL BOX PADS THAT ARE NOT ALREADY PAVED AS DIRECTED BY THE ENGINEER. WORK SHALL BE DONE INCIDENTAL TO THE WEAR.

CONTRACTOR WILL BE REQUIRED TO HAND FINISH SHOULDERS ON ALL APPROACHES AND ENTRANCES AS DIRECTED BY THE ENGINEER.